

No. 11-507
Revised May, 1996

Eaton®
Directional Control Valves



**Models 30920 and 30930, 5 GPM
Directional Control Valves**

We Manufacture

Solutions

Hydraulics

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Features and Specifications

Eaton 5 GPM Directional Control Valves

Model 30920 with Relief Valve
Model 30930 without Relief Valve

Standard Features

- Cast Iron Bodies
- Cored Internal Passages
- Adjustable Pin Type Relief Valve, Factory Set at 138 bar [2000 PSI]
- Open Center Parallel Circuit Design
- Precision Ground Induction Hardened Spools with Chrome Plating on Exposed Ends
- 4-Way – 3 Position Spools, Spring Centered to Neutral
- 3/4-16 SAE Inlet and Return Ports
- 9/16-18 SAE Work Ports (Accept 16097 abd 16166 orifice plates—see Cat. 11-502)
- Work Ports Accept 16097 or 16166 Orifice Plates (see Catalog 11-502)
- Body Bored for Pressure Beyond and Plugged

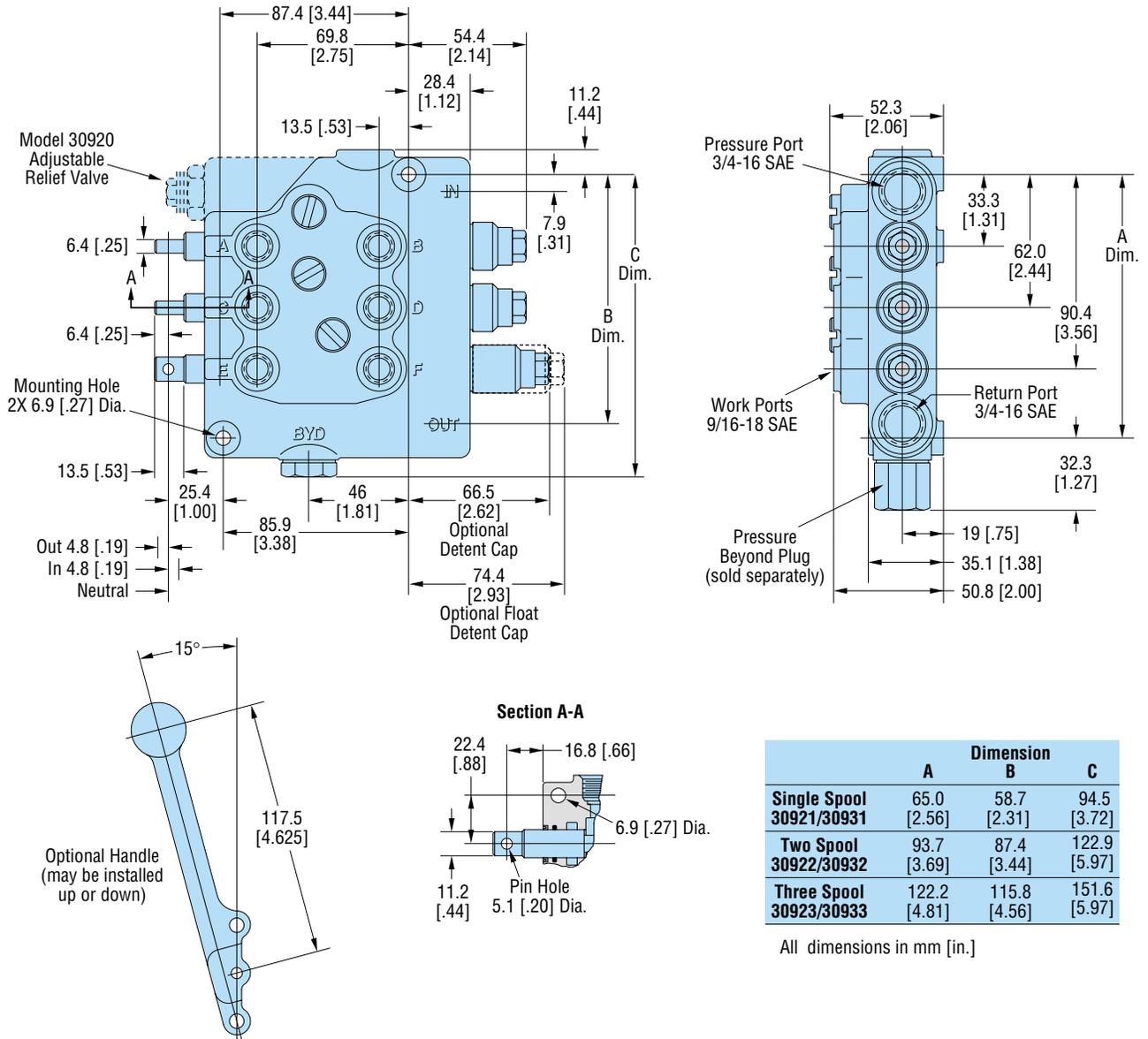
Specifications

- Inlet Flow Rate----- 18,9 L/min. [5 GPM]
- Rated Pressure ----- 207 bar [3000 PSI]
- Maximum Inlet Pressure ----- 241 bar [3500 PSI]
- Maximum Work Port Pressure ----- 310 bar [4500 PSI]
- Standard Relief Valve Pressure Setting ----- 138 bar [2000 PSI]
- Maximum Work Port Leakage at 76 bar [11-- PSI] --- 16.4 ml/min. [1 in³/min.]
- Maximum System Temperature ----- 107° C [225° F]

Standard Catalog Assemblies

Spools	Detent	Relief Valve	Order# Single Spool	Order# Two Spool	Order# Three Spool
4 way, 3 pos	None	2000 PSI	30921-DSC	30922-DSC	30923-DSC
4 way, 3 pos	None	None	30931-DSC	30932-DSC	30933-DSC
4 way, 3 pos motor	“In” & “Out”	2000 PSI	30921-DSD	—	—
4 way, 3 pos motor	“In” & “Out”	None	30931-DSD	—	—

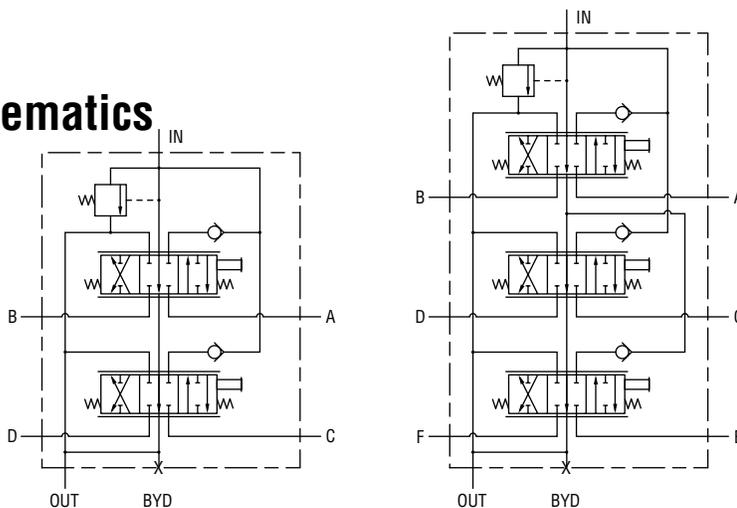
Dimensions



	Dimension		
	A	B	C
Single Spool 30921/30931	65.0 [2.56]	58.7 [2.31]	94.5 [3.72]
Two Spool 30922/30932	93.7 [3.69]	87.4 [3.44]	122.9 [5.97]
Three Spool 30923/30933	122.2 [4.81]	115.8 [4.56]	151.6 [5.97]

All dimensions in mm [in.]

Schematics



Unit Weights

	30920	30930
Single Spool	2.0 [4.5]	1.9 [4.3]
Two Spool	2.9 [6.5]	2.8 [6.3]
Three Spool	3.9 [8.5]	3.8 [8.3]

Weights in kilograms [pounds]

Note: Spool 3 is in tandem with spools 1 and 2, this allows metering to spools 1 and 2 with all excess flow to spool 3.

Options and Performance

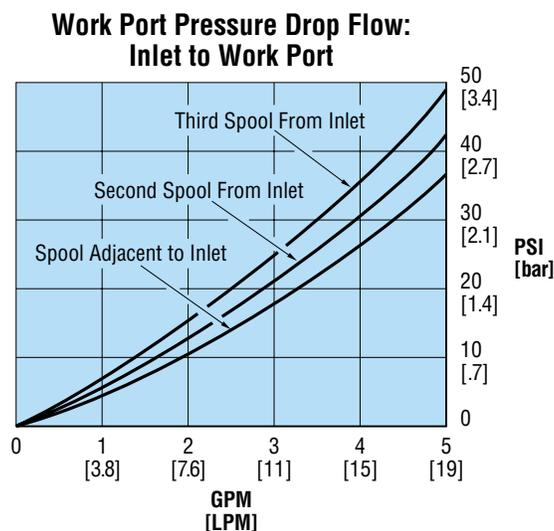
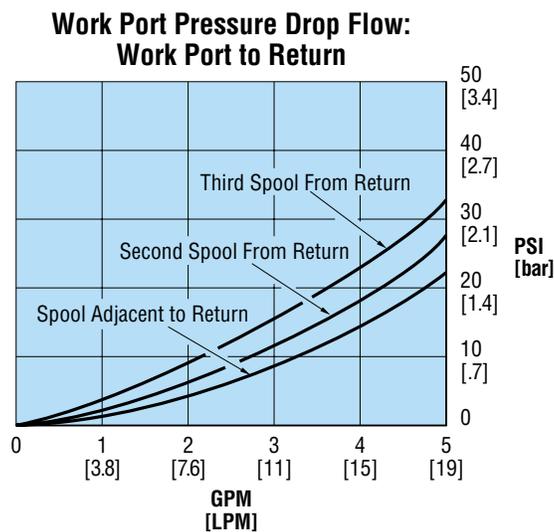
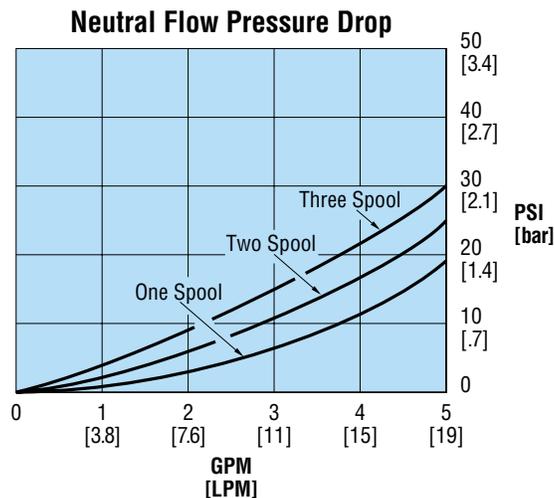
Kit	Order Number
Handle Kit	30950-901
(order one kit for each spool)	
Pressure Beyond Plug	
9/16-18 SAE	31900-321
3/4-16 SAE	31900-341
Closed Center Plug	31900-319
Detent Kits	
Detent Out	30931-913
Detent In	30931-914
Detent In and Out	30931-916
Detent In Float	30931-917

Relief Valve Springs (Adjustment Ranges)	
31 - 62 bar [450 - 900 PSI]	17041-22
59 - 76 bar [850 - 1100 PSI]	17042-17
72 - 86 bar [1050 - 1250 PSI]	17046-15
83 - 114 bar [1200 - 1650 PSI]	17044-16
110 - 159 bar [1600 - 2300 PSI] (Std)	17047-31
155 - 172 bar [2250 - 2500 PSI]	17049-36

Seal Repair Kits	
One Spool	30951-900
Two Spool	30952-900
Three Spool	30953-900

- Optional Spool Configurations
(all spools spring centered to neutral)
- 3 - way, 3 position
(ports "B," "D," and "F" used for 3 - way work ports)
 - 3 - way, 3 position, detented "in" float
(ports "B," "D," and "F" used for 3 - way work ports)
 - 4 - way, 3 position
 - 4 - way, 3 position, detented "in"
 - 4 - way, 3 position, detented "out"
 - 4 - way, 3 position, detented "in" and "out"
 - 4 - way, 3 position, detented "in" float*
(available in spool A and C only)
 - 4 - way, 3 position, motor spool
(lift check removed)
 - 4 - way, 3 position, motor spool, detented "in"
(lift check removed)
 - 4 - way, 3 position, motor spool, detented "out"
(lift check removed)
 - 4 - way, 3 position, motor spool, detented "in" and "out"
(lift check removed)

* If the float feature is used in this valve and another spool downstream is actuated, the downstream pressure could actuate the "floating" cylinder. Therefore, caution should be used as to the reaction of the back pressure applied to the floating function.

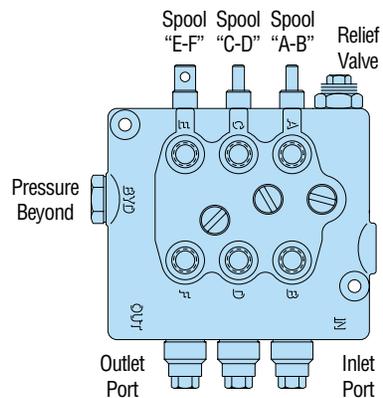


Tests performed with oil viscosity 150 SUS at 37.7° C [100° F] – oil temperature 54.4° C [130° F].

30920 & 30930 Directional Control Valve Special Order Form

Valve Outlet Port Side	Body Plugs	Spool Options	Spool "E-F"	Spool "C-D"	Spool "A-B"	System Relief Valve	Valve Inlet Port Side
Return Port 3/4-16 SAE (Standard)	<input type="checkbox"/> None	3 - way, 3 position (30920-251) (ports "B," "D" and "F" used for 3-way work ports)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> No Relief Valve	Pressure Port 3/4-16 SAE (Standard)
	<input type="checkbox"/> Solid Plug (Standard)	3 - way, 3 position, detented "in" float (ports "B," "D" and "F" used for 3-way work ports)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inlet GPM _____	
	<input type="checkbox"/> Pressure Beyond 9/16-18 SAE 31900-321	4 - way, 3 position (30920-249)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure Setting _____	
	<input type="checkbox"/> Pressure Beyond 3/4-16 SAE 31900-341	4 - way, 3 position, detented "in"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adjustment Range _____ / _____	
	<input type="checkbox"/> Closed Center 31900-319	4 - way, 3 position, detented "out"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		4 - way, 3 position, detented "in" and "out"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		4 - way, 4 position, detented "in" float	<input type="checkbox"/>	float N/A	<input type="checkbox"/>	Originator _____ Date _____	
		4 - way, 3 position, motor spool (30920-250)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Application _____	
		4 - way, 3 position, motor spool, detented "in"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Engineer Approval _____	
		4 - way, 3 position, motor spool, detented "out"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Customer _____	
	4 - way, 3 position, motor spool, detented "in" and "out"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Customer Part No. _____		
	Handles (handle kits, 30950-901, are shipped with valves but not assembled on valve)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Eaton Part No. _____		

Valve Orientation



Notes:

Notes:



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Information contained in this catalog is accurate as of the publication date and is subject to change without notice. Performance values are typical values. Customers are responsible for selecting products for their applications using normal engineering methods.

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